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SHORT COMMUNICATION

Record of occurrence of *Nasua nasua* (Linnaeus, 1766) (Carnivora, Procyonidae) in a densely urbanized area of the city of Canoas, southern Brazil

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Abstract

The South American coati is a carnivore with a wide distribution in South America. Despite this, it is considered a threatened species in Rio Grande do Sul, as Vulnerable, primarily because of the loss of forest habitats. We recorded a *Nasua nasua* individual at the Canoas airbase, one of the last remaining green spaces in a densely urbanized area in southern Brazil. This confirms the capability of this species to use environments that have been changed by anthropic activity. It also highlights the relevance of green spaces in urban areas for wildlife conservation.

Keywords

deforestation, habitat loss, medium sized mammals, South American coati, threatened species, urban ecology, urban green space

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PENSOFT

Nasua nasua (Linnaeus, 1766) is a medium-sized carnivore (body mass: ≈ 5 kg) with diurnal and arboreal habits in forest ecosystems (Kasper et al. 2014; Reis et al. 2014). It has been reported in a wide variety of forest habitats and over a wide altitudinal range, up to 2,500 m (Gompper and Decker 1998; Beisiegel and Campos 2013). The coati is omnivorous, feeding mainly on invertebrates and fruit (Gompper and Decker 1998) and is quite adaptable to modified areas (Beisiegel and Campos 2013).

Nasua nasua has a wide distribution in South America. It extends from Colombia and Venezuela to Uruguay and northern Argentina (Emmons and Helgen 2016). Despite its wide distribution, it is considered threatened in the southernmost state of Brazil: Rio Grande do Sul. Here, it has been classified as a vulnerable species (Rio Grande do Sul 2014). Deforestation and forest fragmentation have been identified as the major threats to this species. Hunting is also a threat, although its impact is more local and restricted to certain areas (Emmons and Helgen 2016). In the state of Rio Grande do Sul, a drastic reduction in the mean size of coati bands has been recorded (with just four to six individuals), according to Indrusiak and Eizirik (2003). The same authors also highlight that records are rare and local extinctions have been observed, while large groups are now restricted to the largest contiguous forests.

In this communication, we report a record of a *Nasua nasua* individual obtained on August 12, 2020 at 07:35 at the Canoas Airbase, Canoas Municipality, Rio Grande do Sul (see Suppl. material 1), at coordinates 29°56'00.8"S, 51°08'29"W (Fig. 1). The Canoas Airbase is located in one of the last and largest green spaces in the municipality. Canoas is part of the Porto Alegre metropolitan area and is the fourth most densely populated city in Rio Grande do Sul. Canoas is highly urbanized, with an urban zone that occupies 99.86% of the area of the municipality, which has practically no rural area remaining (Rio Grande do Sul 2020). The airbase has a total area of approx. 830 ha. Sixty five percent (537 ha) of it is forested area. This record was obtained in a riparian forest along a drainage watercourse that is fed by rainwater and has a flow rate that varies in response to rainfall volumes. The area is a secondary forest in the initial stages of regeneration and is part of a vegetative matrix that includes exotic species such as pines (*Pinus* sp.) as part of a plantation. However, since the airbase is a military zone, the site surveyed was not disturbed by displacement of people, vehicles, or machinery.

The animal was detected during mammal surveys conducted from June to November 2020, using six camera traps (model: Bushnell Trophy Cam XLT). Camera traps were set up at 22 different sampling points, each at a minimum distance of 200 m from the others, at heights of around 30 m from the ground. The criterion for choice of camera trap sites was presence of arboreal vegetation. Each site was sampled for 30 consecutive days. The camera traps were programmed to film for 20 seconds with a one minute interval between films and were checked every 15 days. We conducted a total of 5 sampling months and a sampling effort of 720 trap-days. The animal observed was probably a male, because male adults are solitary (Emmons 1997; Gompper and Decker 1998). In contrast, females and immature males usually roam in groups (Emmons 1997; Gompper and Decker 1998).

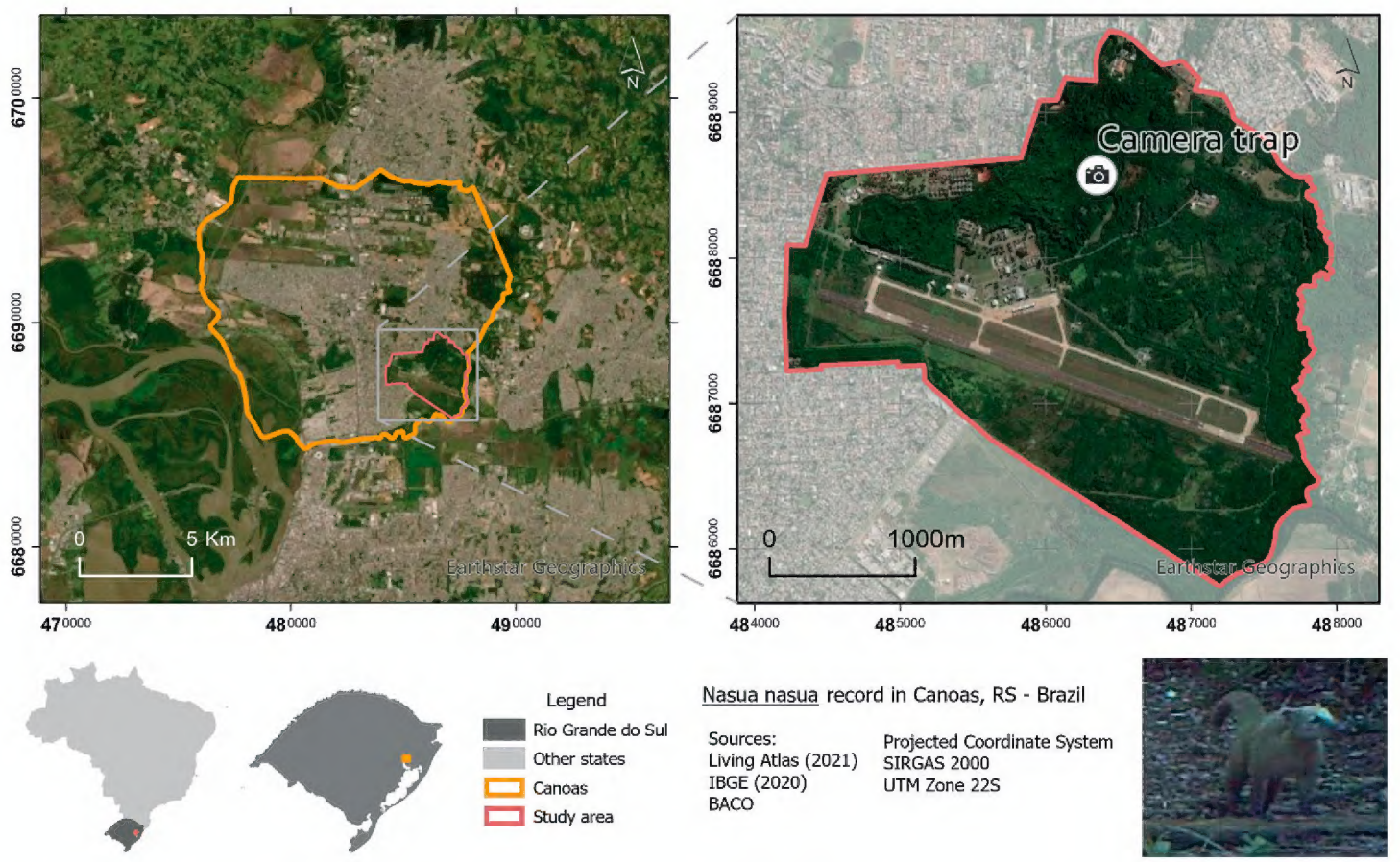

Figure 1. Location of the site of the *Nasua nasua* record within the study area. Orange polygon: limits of the municipal district of Canoas, RS. Red polygon: Canoas airbase. Detail: Canoas airbase with site of record marked. Bottom right-hand corner, photographic record obtained.

There have been no recent records of *N. nasua* in Rio Grande do Sul in the more densely populated parts of the Porto Alegre metropolitan area, which comprises 34 municipal districts (Rio Grande do Sul 2020). Available records for this species are predominantly concentrated in the high plains in northern Rio Grande do Sul and its foothills (Indrusiak and Eizirik 2003; Táxeus 2022). There the forest is denser and continuous. The largest forest remnants in areas with greater urban concentrations are located on the granite hills of Porto Alegre and Viamão (Menegat et al. 1998). Previous studies of mammalian fauna occurring in these areas do not report this species (Penter et al. 2008; Cademartori et al. 2011; Pires and Cademartori 2012). Moreover, management plans of conservation units within these highly urbanized areas do not mention occurrence of coatis (Antonio 1996; Sestren-Bastos 2006; Witt 2008). In 2021, the species was mentioned in the management plan for the Banhado Grande environmental protection area, which encompasses parts of the municipal districts of Viamão, Santo Antônio da Patrulha, Glorinha, and Gravataí (Nin et al. 2021). Nevertheless, that record is from the eastern part of the metropolitan area with lower urbanization than Canoas (Rio Grande do Sul 2020).

This record confirms the capacity of this species to use environments that have been changed by anthropic activity (Beisiegel and Campos 2013; Ferreira 2017). In urban areas, the availability of anthropic food resources can favor the establishment of species with greater plasticity, such as *N. nasua* (Barreto et al. 2021). Conversely, proximity of humans can also cause conflicts and threats to wildlife and increases the

likelihood of diseases transmitted by domesticated animals, such as cats and dogs (Beisiegel and Campos 2013). Although this species is globally and nationally rated as of Least Concern, its population density varies greatly from region to region and is decreasing due to habitat loss and hunting (Beisiegel and Campos 2013; Emmons and Helgen 2016). So, this record is worthy of note because it refers to an urban area where coatis were believed to be extinct, in the only Brazilian state in which the species is threatened. It highlights the importance of urban green spaces for wildlife conservation, since these spaces can furnish corridors or stepping-stones, enabling migration and reducing isolation of populations in increasingly fragmented landscapes. This is very important for defining appropriate conservation measurements for endangered species, especially beyond protected areas.

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References

Antonio MG [Coord.] (1996) Plano de Manejo: Parque Estadual de Itapuã. Secretaria da Agricultura e Abastecimento, Departamento de Recursos Naturais Renováveis, Porto Alegre, 162 pp. https://www.sema.rs.gov.br/upload/arquivos/201610/15171153-plano-manejo-peitapua.pdf

Barreto WTG, Herrera HM, De Macedo GC, Rucco AC, De Assis WO, Oliveira-Santos LG, Porfírio GEO (2021) Density and survivorship of the South American coati (*Nasua nasua*) in urban areas in Central-Western Brazil. Hystrix, the Italian Journal of Mammalogy 32(1): 82–88. http://www.italian-journal-of-mammalogy.it

Beisiegel BM, Campos CB (2013) Avaliação do risco de extinção do Quati *Nasua nasua* (Linnaeus, 1766) no Brasil. Biodiversidade Brasileira 3(1): 269–276. https://www.icmbio.gov.br/portal/images/stories/biodiversidade/fauna-brasileira/avaliacao-do-risco/carnivoros/Nasua_nasua.pdf

Cademartori CV, Marques RV, Pires DPS, Cabral TC, Silveira EC, Lima CS, Dellagnese DG, Silva AR (2011) Lista comentada da mastofauna do Morro do Coco, RS: subsídio para a divulgação e conservação do patrimônio natural. Mouseion 1(9): 77–95. https://revistas.unilasalle.edu.br/index.php/Mouseion/article/view/30

Emmons LH (1997) Neotropical rainforest mammals: a field guide. Second Edition. The University of Chicago Press, Chicago and London, 307 pp.

Emmons L, Helgen K (2016) *Nasua nasua*. The IUCN Red List of Threatened Species 2016: eT41684A45216227. https://doi.org/10.2305/IUCN.UK.2016-1.RLTS.T41684A45216227.en

Ferreira GA (2017) Wild neighbors: Perception of residents of the environment of a fragment of Atlantic Forest in urban areas on the presence and approximation of Coatis (*Nasua nasua*). International Journal of Avian & Wildlife Biology 2(6): e00039. https://doi.org/10.15406/ijawb.2017.02.00039

Gompper ME, Decker DM (1998) Nasua nasua. Mammalian Species 580: 1–9. https://doi.org/10.2307/3504444

Indrusiak C, Eizirik E (2003) Carnívoros. In: Fontana CS, Bencke GA, Reis RE (Orgs) Livro vermelho da fauna ameaçada de extinção do Rio Grande do Sul. EDIPUCRS, Porto Alegre, 507–533.

Kasper CB, Trinca CS, Sanfelice D, Mazim FD, Trigo TC (2014) Os carnívoros. In: Gonçalves GL, Quintela FM, Freitas TRO (Orgs) Mamíferos do Rio Grande do Sul. Pacartes, Porto Alegre, 161–188.

Menegat R, Porto ML, Carraro CC, Fernandes LAD (1998) Atlas Ambiental de Porto Alegre. UFRGS, Porto Alegre, 228 pp.

Nin CS, Mähler Jr JKF, Vianna LR, Stumpf PP, Ramos RA (2021) Plano de Manejo: Área de Proteção Ambiental do Banhado Grande. Volume II. Secretaria do Meio Ambiente e Infraestrutura, Departamento de Biodiversidade, Porto Alegre, 109 pp. https://www.sema.rs.gov.br/area-de-protecao-ambiental-do-banhado-grande

Penter C, Pedó E, Fabián ME, Hartz SM (2008) Inventário rápido da fauna de mamíferos do Morro Santana, Porto Alegre, RS. Revista Brasileira de Biociências 6(1): 117–125. http://www.ufrgs.br/seerbio/ojs/index.php/rbb/article/view/882

Pires DPS, Cademartori CV (2012) Medium and large sized mammals of a semideciduous forest remnant in southern Brazil. Biota Neotropica 12(3): 239–245. https://doi.org/10.1590/S1676-06032012000300023

Reis NR, Fregonezi MN, Peracchi AL, Shibatta OA, Sartore ER, Rossaneis BK, Santos VR, Ferracioli P (2014) Mamíferos terrestres de médio e grande porte da Mata Atlântica: guia de campo. Technical Books, Rio de Janeiro, 146 pp.

Rio Grande do Sul (2020) Atlas Socioeconômico do Rio Grande do Sul: Região Metropolitana de Porto Alegre – RMPA. https://atlassocioeconomico.rs.gov.br/regiao-metropolitana-de-porto-alegre-rmpa

Rio Grande do Sul (2014) Decreto nº 51.797 de 8 de setembro de 2014: Declara as espécies da fauna silvestre ameaçadas de extinção no Estado do Rio Grande do Sul. https://leisestaduais.com.br/rs/decreto-n-51797-2014-rio-grande-do-sul-declara-as-especies-da-fauna-silvestre-ameacadas-de-extincao-no-estado-do-rio-grande-do-sul

Sestren-Bastos MC (2006) Plano de manejo participativo do Parque Natural Morro do Osso. Secretaria Municipal do Meio Ambiente, Porto Alegre, 149 pp.

Táxeus (2022) Táxeus. https://www.taxeus.com.br

Witt PBR [Coord.] (2008) Plano de manejo: unidade de conservação Reserva Biológica do Lami José Lutzenberger. SMAM, Porto Alegre, 221 pp.

Supplementary material 1

South American Coati at the Canoas airbase

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Data type: Multimedia

Explanation note: Record of South American Coati at the Canoas airbase in Rio Grande do Sul.

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